



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-G BYPASS RATIO: 9.4
 UNIQUE ID NUMBER: 11RR053 PRESSURE RATIO (π_{00}): 42.5
 COMBUSTOR: Phase5 Tiled
 ENGINE TYPE: TF RATED THRUST (F_{00}) (kN): 323.7

REGULATORY DATA **** DATA SUPERSEDED ** SEE FOLLOWING UID FOR REVISED DATA: 12RR059**

| CHARACTERISTIC VALUE: | HC | CO | NO _x | SMOKE NUMBER |
|--|-----|------|-----------------|--------------|
| D _p /F ₀₀ (g/kN) or SN | 0.1 | 11.2 | 62.8 | 5.8 |
| AS % OF ORIGINAL LIMIT | 0.3 | 9.5 | 50.2 | 33.5 |
| AS % OF CAEP/2 LIMIT (NO _x) | | | 62.8 | |
| AS % OF CAEP/4 LIMIT (NO _x) | | | 68.2 | |
| AS % OF CAEP/6 LIMIT (NO _x) | | | 74.8 | |
| AS % OF CAEP/8 LIMIT (NO _x) | | | 83.6 | |

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

| MODE | POWER SETTING (%F ₀₀) | TIME (minutes) | FUEL FLOW (kg/s) | EMISSIONS INDICES (g/kg) | | | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|--------------------------|--------|-----------------|--------------|
| | | | | HC | CO | NO _x | |
| TAKE-OFF | 100 | 0.7 | 2.403 | 0.00 | 0.53 | 50.27 | 3.1 |
| CLIMB OUT | 85 | 2.2 | 1.968 | 0.00 | 0.47 | 38.18 | 3.9 |
| APPROACH | 30 | 4.0 | 0.649 | 0.00 | 0.72 | 13.60 | 3.0 |
| IDLE | 7 | 26.0 | 0.242 | 0.05 | 8.14 | 5.54 | 0.6 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 75 | 17 | 3358 | 19198 | - |
| NUMBER OF ENGINES | | | | 3 | 3 | 3 | 3 |
| NUMBER OF TESTS | | | | 5 | 5 | 5 | 5 |
| AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX) | | | | 0.1 | 10.4 | 59.3 | 5.2 |
| SIGMA (D _p /F ₀₀ in g/kN, or SN) | | | | 0.0 | 3.0 | 0.9 | 2.0 |
| RANGE (D _p /F ₀₀ in g/kN, or SN) | | | | 0-0.1 | 6.3-13 | 58.4-60.5 | 3-8.2 |

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

| | |
|----------------------|-----------------|
| BAROMETER (kPa) | 98.9-102.1 |
| TEMPERATURE (K) | 284.1-290.3 |
| ABS HUMIDITY (kg/kg) | 0.00432-0.00721 |

FUEL

| | |
|----------|------|
| SPEC | |
| H/C | 1.89 |
| AROM (%) | 16.7 |

MANUFACTURER: Rolls-Royce plc
 TEST ORGANIZATION: Rolls-Royce
 TEST LOCATION: Derby
 TEST DATES: 24/09/2009-09/06/2011

NO_x REGULATION PARAGRAPH

| | |
|---|-------------------|
| | 2.3.2 c) (CAEP/4) |
| x | 2.3.2 d) (CAEP/6) |
| | 2.3.2 e) (CAEP/8) |

REMARKS

1. Representative of Package B engines

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)